Employee Health and Productivity

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Today, I would like to focus on two studies that are in some ways different, but in other ways very connected to one another. The first focuses on an emerging area called "health and productivity management." I'll provide some background on what health and productivity management is all about and why corporate America is beginning to attend to this topic.

A second study that I would like to review with you is a study published in the Journal of Occupational Environmental Medicine called the HERO study. HERO stands for Health Enhancement Research Organization. This is a landmark study that connects 10 modifiable risk factors and medical care expenditures. I think you'll be quite surprised and astounded by some of the findings.

First, let me review the definition of health and productivity management, or HPM. We see it as an emerging business strategy that's based upon integrated information, aimed at improving the total value of human resource investment. One benchmark company in this area is General Electric. GE is led by a very charismatic, passionate individual named Jack Welsh, President and CEO. His philosophy is that if you can't measure it, you can't manage it, and consequently, it ain't worth doing. He believes that you need to have measures, data, and reporting to ensure that whatever program you put into place is actually working. So data, in GE's situation, drives integration.

Essentially, Health Productivity Management (HPM) helps organizations establish the link among today's business climate, people, and operational challenges, and ultimately organizational productivity. The point is that what we do in improving worker health is directly related to how productive and profitable that organization becomes. Ultimately, our work is bourne out in the stock price of the business.

Let's put HPM in the context of global forces that impact today's businesses. You read about these on a daily basis, in *The Wall Street Journal* and *Business Week Magazine*. The amount of information that each of us has to gather and absorb, assimilate, and act upon on a daily basis is overwhelming. One study reports that in an average American business, the typical worker needs to deal with about 200 pieces of communication each day. That's an enormous amount of information to respond to, which in turn increases stress.

The other corporate trend is exemplified by what is termed the "new work contract." It used to be that when you were an employee of a business, you were mentored and guided through your business career. Today, the message is that you've got to manage your own career, make sure that you learn the skills necessary to keep you marketable internally and externally, share in the costs of the business and its success, take ownership of an organization, become a leader, an entrepreneur within the business, and survive if you're fit.

There is increased emphasis on productivity and profitability. Some employees love it. They think this is great. But in many other cases, the employee response is negative. Employees feel burnout, lack of commitment, insecurity, instability, and they begin to reexamine their career decisions. You would be surprised to know the number of people in human resources departments who decide to rent sailboats in Tahiti after experiencing several years under this kind of pressure.

Here are some fascinating statistics. Looking at trends from 1988 to 1995, the proportion of employees who think the workload is excessive has gone from 37 to 44 percent; those who frequently worried about being laid off moved from 22 to 46 percent; those who worry about the company's future, from 36 to 55 percent; and the number of those who feel that their job is secure if they perform has dropped from about 75% to 50%.

These things have significant consequences in terms of increased health and productivity risks. These risks fall into four broad categories. There are medical consequences, including chest and back pains, coronary heart disease, GI disorders and so forth; psychological consequences, including anxiety, nervousness, depression, irritability, apathy, boredom,

depression, loneliness, moodiness, and insomnia; behavioral outcomes, such as accidents, drug and alcohol abuse, eating disorders, smoking, tardiness, and exaggerated diseases; and finally, there are organizational consequences that take the form of absenteeism, poor work relations, turnover, job dissatisfaction and low productivity.

What is interesting is that these problems are being addressed independently within the organization. Different silos and different fiefdoms, different departments, and different functions are each trying to solve these problems independently. In fact, the way in which they try to solve these problems is to independently manage disability, healthcare, health, demand, disease, and stress; strengthen their EAP, re-engineer, reorganize, give incentives, cut, and retrain. All these things are happening in parallel, independently with relatively little communication among the various departments and organizational functions.

A Fortune 500 company has successfully argued for the integration of these efforts. The company's rationale was written as follows: *This company makes a significant investment in human capital. The maintenance costs associated with this human capital investment is substantial. A significant percent of the maintenance costs are associated with health*. The document then lists all the different programs in which the company is investing money: health benefit plans, long-term disability, salary replacement for short-term disability, Workers' Compensation, occupational health services, health promotion, epidemiology, industrial hygiene, safety, sick leave, demand management, case management, return-to-work planning, restrictive work assignment, absenteeism, EAP, psychological services, ADA compliance, FMLA compliance, and the list goes on.

In today's corporate environment, people management looks like a giant jigsaw puzzle where functions, silos, and intervention programs are being managed independently. Where we are headed, and really what health and productivity management is all about, is putting all these pieces together so that they are synchronized. So that they're all working toward a common goal, a common end point: integrated health and productivity management.

As it turns out, oftentimes the same individuals are being managed by the various human resource programs. The same people are managed in group health, disability absenteeism, disease, management, Workers' Compensation, and organizational development. These employees are often thrown over the fence from one area to another. For example, Workers' Compensation might try to transfer a case to another area, such as disability, absence management or group health, so that the case becomes someone else's problem. So there is a need to integrate and create internal weaving of these different functions.

So that's the background to the first study that I will discuss, which focuses on establishing norms and benchmarks in HPM. The question is, where do you get these norms and benchmarks?

The first thing you want to establish is how good or bad you are in each key area of HPM. Numbers in a vacuum are quite meaningless, unless you have some kind of comparison point. Back in 1996, upon the urging of many of our customers, we partnered with the American Productivity and Quality Center, a benchmarking organization based in Houston, Texas. We began a process to establish norms and benchmarks in a quantitative fashion, as well as to identify best practices in HPM in order to bring that knowledge back to the sponsoring organizations.

The participants in that benchmarking study represent about a half-million employees throughout the United States. In 1992, this study involved 16 organizations. This year we will involve over 20 organizations.

In the benchmarking study, we actually had two phases: the first was quantitative, and the second was qualitative. The quantitative phase sought to identify the key metrics in each area of health and productivity management. We identified ten broad areas of health and productivity management.

Our goal was to replicate the A. Foster Higgin Mercer study begun 15 years ago, which reports annual data on company health care costs. Those results are published each year in *The New York Times* and *The Wall Street Journal.* We wanted to do the same thing, but rather than just health care, we wanted to get the critical utilization and cost information in each of the ten areas of HPM.

For five areas, we were able to attach a dollar value to each HPM category. In total, the median health and productivity costs across these five HPM categories in 1996 totaled $7,649 per employee. The majority of this came from the group health area, but a significant portion also came from the areas of unscheduled absences, turnover, non-occupational disability and Workers' Compensation.

A similar analysis done by Pepsico revealed that the company spent about $200,000,000 on group health for direct medical costs, and another $200,000,000 in direct productivity programs. Productivity loss associated with low morale and poor organizational health was also mentioned in the study.

As we gathered data, we were able also to identify organizations that realized best practice metrics. We operationally defined best practice metrics as the 25th percentile or better. Comparing actual HPM experience to best practice levels, we estimated that there was about a 30 percent opportunity for improvement, or roughly $2,200 per employee per year. The area that had the potential for greatest improvement of opportunity was the area the least often monitored and measured -- unscheduled absence.

We also tried to estimate indirect costs, but we did not go as far as to try to estimate the number of hours employees spend staring out the window. But we looked at absenteeism in its various forms - non-occupational disability, Workers' Compensation, and unscheduled absence.

We asked the question, what would it take to bring in replacement workers for the individuals absent? There was a direct cost. We were actually paying these people even when they did not come to work. But there was also an indirect cost. This included either having to bring in somebody to do that person's job, or the actual loss of productivity for that individual who is not contributing to the overall output and profitability of that organization. We found that indirect costs translated into another $3,600, giving a grand total of $11,000 in annual health and productivity costs (direct and indirect.)

An "America at Work" survey released by Aon Consulting also reported some interesting findings on lost productivity due to direct and indirect causes. The survey results showed an average loss of 15 days per employee per year due to: lost productivity; missed work days due to sick leave, personal leave, stress, caring for a sick child, child care, eldercare, etc; and time spent at work on personal matters.

We also examined qualitative issues related to best practices and benchmarking. We wanted to identify the companies that were doing the best job in managing health and productivity. Even though this is a new idea and a new development in the HR arena, there are a number of companies, probably a dozen or so in America today, who are doing a pretty good job in integrating these various programs and working toward a common goal. We wanted to identify what allowed them to do that. How did they get permission to move in an HPM direction, rather than continue to maintain things in a silo environment? We wanted to know what they actually did in terms of implementation, and finally, we wanted to know how they were evaluating these programs -- that is, what methods were being used to track, monitor, and document that these programs were successful?

Through a fairly elaborate process, we identified the following organizations as demonstrating best practices: Coors, Texas Instruments, Union Pacific, Steelcase, GE, Champion and Pacific Bell.

This year we have identified a new set of best practice companies that have focused on the metric portion of HPM -- that is, of the tracking and reporting, monitoring, and ROI studies. We'll be visiting five other companies to find out what they're doing and how they're doing it.

The results of this benchmarking study were presented in an extensive report. I won't go into all the details of that report, but I will touch briefly on the top ten themes that emerged, because they were things that we found to be common across the various organizations.

Most importantly, these companies were focused on HPM, not because it was an HR activity, but because it was aligned with the business purpose of that organization. The business purpose was to sell products and services to the outside world. They used the company's mission statement, and translated it into HPM terms. These terms were understandable by the CEO and CFO. That is how they got support. That is how they got funded. That is how they got senior management to sit on their steering committee.

We also found that prevention, health promotion and occupational health were the primary drivers and champions for an HPM effort. This was probably because people felt that unless they became partners in an overall business process, that they would be easily cut out of the budget. They were concerned that their services and programs, since they often resided off site, could easily be severed. They also were aware that in order to maintain their programs and promote them, they needed to provide good, solid data and evidence that they were effective. Not just in terms of just health outcomes, but also in terms of cost outcome. So they brought to the table a great of deal of experience in documenting results.

The emphasis for these HPM companies was on quality of life improvement, not just cost cutting. They recognized that even though 20 percent of the population are "the troublemakers" - the people that the organization devotes a lot of time and energy to - there is the other 80 percent of the employee population who show up to work dutifully, every day, on time.

What does the company do to keep those people? To motivate them, energize them, to keep them engaged? These companies have programs dedicated to the overall improvement of life and quality of care; they aim to create a "healthy company" environment, not just manage the problem cases.

These companies found that data measurement and evaluation were critical. Interestingly enough, they typically began to implement programs without a lot of data. They knew that their costs were going up. They really didn't know why costs were going up. They didn't know what factors were driving those costs. But they got together and said, "You know, there are some things that we're doing that are just plain stupid. We're doing things that are counter-intuitive. There is a lot of low-hanging fruit that we can attack." About six to nine months later, they decided that they needed to collect data and document results in order to further support their initiatives.

A final, important point I want to make is that these people are having fun -- which nowadays, in HR and benefits departments, is a rare phenomenon. They really were enthused. They were excited. They were doing things that were cutting edge, and they really seemed to enjoy what they were doing. They enjoyed working with one another.

The other thing that is becoming more apparent as a result of this focus on HPM, is that senior management is beginning to see employee total compensation as a function of wages, fringe benefits, and something called "other labor costs". Up until now, when doing employee health management, most of the fine tuning had already been done, such as changing deductibles, co-insurance, out-of-pocket maximums, benefits, designs, utilization review systems, and so forth. Not much emphasis has been placed on the integration of benefit programs, and very, very little attention has been given to what we call "other labor costs". It may turn out that those other labor costs will swamp out direct program costs.

Let me switch gears and talk about another benchmarking study which examines the impact of modifiable risk factors on healthcare costs. The Health Enhancement Resource Organization (HERO) was formed two years ago by a group of organizations in the public, nonprofit and private sectors. It's a potpourri of different organizations, all of whom have a common interest: shifting the health care paradigm in the United States from treatment to prevention.

Currently, in the U.S., we allocate about 3-5 percent of the trillion-some-odd dollars spent annually on health care to prevention and health promotion, and about 95-97 percent on disease treatment. The intent of HERO is to shift that balance just a bit. Maybe spend 7-10 percent on prevention and the rest on treatment. HERO recognized that the way to do that is to provide good economic data to demonstrate that prevention and health promotion actually have a meaningful impact on cost outcomes.

There are a series of steps in that process. The first is to provide evidence that risk factors, modifiable risk factors, actually cost you more. Demonstrate that people who have these risk factors incur significant incremental costs above those who lack the risk factors.

You may be thinking that the relationship between risk and cost has already been documented. There are, indeed, landmark studies. Probably the most noteworthy is the one conducted at Control Data Corporation in 1987. Milliman and Robinson produced those results. There are other studies done at Dupont and Steelcase. But none of them examined a large enough population, and they did not use the most current statistical methods to identify and eliminate other possible explanations for their results.

With this in mind, HERO committed itself to conducting good, solid research that connects modifiable risk factors with health care expenditures. True, we know a lot about the contribution of risk factors to morbidity and mortality. We really don't have to re-prove that connection. There are about 10,000 epidemiological studies that document a clear

relationship between a risk factor and disease incidence. But very little is known about the contribution of these risk factors to expenditures for otherwise healthy individuals.

The following are two questions that we attempted to answer. 1) Do those individuals who are at higher risk have higher medical expenditures than those who are at lower risk? 2) What are the incremental expenditures for employees with multiple-risk factors?

We were fortunate to have available a repository of medical claims data for six organizations, as well as health risk appraisal data. In fact, this study came about when David Anderson and I were sitting at a HERO meeting. A senior vice president of Stay Well in Minneapolis, he said, "You know, we have a group of common customers. In fact, we have about 12 to 13 common customers. You've got the medical data, we've got the HRA data - why not combine these data and see what we find?" We then obtained permission from these organizations to pool their data for this study. The database is drawn from employees of four large employers and two State governments (Michigan and Tennessee.)

This was a six-year study, from 1990 to 1995. We had individual transaction-level medical claims, health plan enrollment and HRA data. We needed enrollment because we didn't just want to look at people who had claims -- we also wanted to include people who didn't incur any claims. They were equally important. We ended up with about 46,000 employees and over 100,000 person-years of experience, which turns out to be the largest database of its kind ever accumulated. It's about four times larger than the Control Data Corporation database.

We also, have data available on about 12,000 subjects with two or more HRAs. This is an interesting database that we're utilizing to look at changes in risk, and changes in cost, over time. The results of this study have so far been inconclusive. We're hoping to add more subjects to the database, and also do further analysis. The nice thing about the data base is that it is very, very rich on the medical side. It's got all of the transaction data, including

diagnostic, procedural, and expenditure data. This allows us to home in on specific disease outcomes.

The study that I will review with you now looked at total healthcare costs. A follow-up study that we conducted for NASA focused specifically on coronary artery disease (CAD). There were 2,500 patients in this database who had CAD diagnoses and we were able to look at risk factors impacting disease outcomes.

The HRA that we used is the Stay Well HRA, Healthpath 4. The nice thing about the HRA is that it remained constant throughout the entire study period. There was very little revision of the instrument itself. There were ten risk categories that were looked at for the study. We gave subjects a higher or lower risk designation for each of these ten categories. Inclusion criteria for the study were: 1) subjects had to be active employees between the ages of 16 and 64, and 2) subjects had to have at least six months of non-COBRA medical plan enrollment.

We conducted regression studies (both multivariate and logistic regression) to estimate the relative contributions of these ten risk factors and control variables to the outcomes of interest. The outcomes of interest were: the likelihood of incurring a medical claim, total expenditures for individuals with claims, and likelihood of having extremely high (outlier) claims.

The demographics of the study population were fairly representative of a working population. Most employees were 35 to 44 years old; the male to female distribution was 60/40; the race distribution fairly typical; and professional employees outnumbered the managerial employees.

Let's look at the distribution of risk factors in the population. Again, we're looking at the proportion of people at highest risk. These are the extreme cases. About a third of the population who are basically sedentary -- the only exercise they get is channel-switching in the evening. Former tobacco users constituted about a third of the population, and current

tobacco users, about 19 percent. It's interesting to note that the proportion of people with high stress was also 19 percent.

The number one and number two predictors of increased short-term medical costs of this population were depression and stress respectively. High blood glucose was number three. Six out of the ten modifiable risk factors were based on self-report, and four out of ten were based on biometric measures that were collected by health professionals.

Depression is leading the pack in terms of incremental cost. There is about a 70 percent additional cost for people with depression -- that is, self-reported depression -- versus those who did not report depression. One important point that I may not have made before is that for each of these variables, we are controlling for any other risk factors. So for each of the ten modifiable risk factors, we hold the other nine risk factors constant, as well as the demographic confounders, where possible.

In our results, we found that seven out of ten risk factors contribute to significant, positive incremental costs. Two were actually negative, and one was non-significant. Excess alcohol consumption was a negative predicator of costs. These results were corroborated by prior studies that looked at employee populations. Our interpretation is that these people basically avoid the healthcare system. They basically avoid healthcare expenditures through self-medication. Remember, these are short-term cost outcomes.

We also looked at combinations of risk factors. I'll highlight a few. First, those at high risk for heart disease, whose risks include obesity, smoking, sedentary lifestyle, stress, and so forth, versus those lacking those risk factors cost $3800 per year versus $1158. That represents a 225 percent difference. Second, people who exhibited both depression and stress were about 140 percent more costly than those lacking these 2 risk factors.

Let me end here, in terms of the HERO study, by saying that our main conclusion was that common modifiable risk factors were found to increase medical expenditures in an otherwise

healthy working population. The major contribution of this study is that it included a much larger population across multiple employers, and the analytic methods used were more rigorous than any used in previous studies. We believe this information is important to a variety of stakeholders -- including managed care organizations, employers, providers, and patients themselves -- in terms of the impact of behavioral risk factors on health care costs. We have not yet linked productivity measures to these risk factors -- that's the next piece. We think that our results can help direct prevention efforts that achieve maximum financial impact, as well as promote worker health.

Let me also note that there are a number of follow-up studies that are emerging out of the data base, including a more precise focus on specific disease outcomes.

To summarize these research efforts, a number of employers are striving to provide a balance between their business concerns and individual health concerns, in order to improve profitability and productivity. This research will enable them to make the connection between the health and well being of a population, health and well being of an organization, and bottom line organizational performance. These forward thinking organizations are impacting the intangibles as well as tangibles to achieve a healthy and productive work force. We're finding that the work world is changing very rapidly. HR's role has evolved from being a cost center, to being much more of a catalyst for change.

The individualized tunnel vision and independent, uncoordinated approaches that have been status quo until now don't really make sense any longer. What is needed is an integrated and comprehensive model for encompassing health and productivity management -- a model that considers individual, organizational and societal influences on outcomes. As Jack Welsh at GE says, "You can't manage what you can't measure."

Thank you very much for your time and attention. Are there any questions?

Question: Are you sure that the HRA program attracts the right people?

Answer: We're capturing the right people. We concluded a study with Boeing that shows that if you match up medical claims experience, HRA experience, and look at risk factors, the HRA program is capturing a significantly higher proportion of unhealthy individuals as participants. This was a surprise to us, and quite gratifying to Boeing. We found that there was a higher proportion of people with high medical expenditures who participated in the HRA program than not, which was counter to a lot of the conventional wisdom.

There is always a proportion of the population, I don't know what the number is, perhaps 20 to 30 percent, who wouldn't go near an HRA, wouldn't even go near physician, and that's obviously a problem situation. But we're finding more and more people who are actually going out seeking an HRA assessment and complying with follow-up measures.

Question: I'm curious. You said that high alcohol use is associated with a much greater chance of being overweight and suffering from other health problems, while work was sort of a secondary grounds for stress.

Answer: We looked at interactive models as part of our analysis and found that they really didn't contribute very much to the explanatory power of these risk factors. These modifiable risk factors were quite independent of one another. We were worried about multi-collinearity issues, but we found that the risk factors were not very highly correlated to one another.